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HARRIS, WILTSHIRE & GRANNIS LLP

1200 EIGHTEENTH STREET, NW
WASHINGTON, DC 20036
TEL 202.730.1300 FAX 202.730.1301
WWW.HARRISWILTSHIRE.COM
ATTORNEYS AT LAW

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EX PARTE OR LATE FILED

10 November 1999

BY HAND DELIVERY

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: *Deployment of Wireline Services Offering Advanced Telecommunications Capability, Further Notice of Proposed Rulemaking, CC Docket No. 98-147—* ***Notice of Ex Parte Presentation***

Dear Ms. Salas:

Paradyne Corporation ("Paradyne") submits this *ex parte* presentation in compliance with Section 1.1206 of the Commission's rules. Paradyne supports the FCC's line sharing proposals in the above-captioned proceeding.[1]

In this submission, Paradyne makes four principal points. *First*, line sharing is a technically feasible means of promoting consumer choice among advanced services and their providers. *Second*, in adopting rules for line sharing, the Commission should allow the market to determine a variety of POTS splitter designs. The adoption of a single POTS splitter design specification—whether by the Commission or an industry standards body—would stifle innovation and competition. Instead, the Commission should direct industry bodies to develop network protection criteria—similar to those embodied in Part 68 for customer premises equipment—thereby ensuring customer-driven future innovations and refinements of still-nascent xDSL technologies, much as the Commission did to advance the development of dial-up modems. *Third*, the Commission should encourage the development of a generic mechanical housing that could accommodate a variety of technology-specific POTS splitters on a line-by-line basis. Finally, the Commission should require CLEC access to the POTS splitter, particularly for testing purposes.

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[1] *See In the Matter of Deployment of Wireless Services Offering Advanced Telecommunications Capability, Further Notice of Proposed Rulemaking*, 14 FCC Rcd. 4761 (1999) ("*FNPRM*").

I. The Commission Should Mandate Line Sharing

The Commission should mandate line sharing to serve the public interest. Line sharing ensures that customers will be able to choose among a variety of providers of advanced services by giving incumbent LECs the incentive to provision additional local loops. The incumbent LECs' arguments that line sharing is technically infeasible are unavailing.

A. Line Sharing Ensures Consumer Choice Among Providers of Advanced Services

Line sharing will resolve the impending shortage of local facilities by applying existing and developing technologies to make more efficient use of existing and planned facilities. For the past few years, new loop capacity has largely been provisioned by use of optical fiber or digital loop carrier to provide derived voice channels. While an ILEC may reinforce existing feeder cables with new copper sub-feeders, it is becoming less common for a LEC to extend a new copper cable from a central office to provide for subscriber growth. Over time, LECs will increasingly deny requests for unbundled loops due to a lack of available facilities. Line sharing, however, would alleviate this problem using local facilities more efficiently.

Consumers, in turn, would have more options for local and advanced services. Such services would also be cheaper and available with shorter lead times. For the ILEC, most of the cost of the local loop is already embedded in the cost of providing local service. The additional cost of provisioning a new digital service over a loop already provisioned for POTS results primarily from the installation of a splitter in the central office to separate the baseband POTS channel from the DSL channel. As the cable pair between the central office and the customer would already exist, the customer would experience less of a delay in receiving service than if new facilities—to the extent they were even contemplated—would be available.

B. Line Sharing Is Technically Feasible

For two competing carriers to line share, both POTS and xDSL performance must be protected. In the central site, this is accomplished by use of a splitter. As discussed below in part II, splitter electrical requirements should not be based on a particular design, but rather based on restricting the influence of each service on each other.

OSS adaptation for line sharing is also feasible. Currently, ILECs are deploying multiple services over the same loop, including (1) Digital Added Main Line, where two derived POTS circuits are provided over the same loop; (2) the CO-LAN service associated with Centrex, which provides a data over POTS service on the same loop; and (3) ISDN, which provides data and, effectively, POTS over the same loop. The OSSs used for provisioning already accommodate different carriers. Thus, as a technical matter, the provisioning of different carriers' services over a single line would differ little from what carriers are already doing in providing different services over a single line.

Maintenance of a line with POTS and xDSL will be similar to what is already accomplished today with ADSL. When testing a line, assurance is made that the trouble is not in the CPE, including the inside building wiring. If customers maintain their own CPE and the technician finds the trouble is in the CPE, then the customer pays for the visit. The risk of xDSL causing a problem with POTS or POTS causing a problem with xDSL is minimized by use of the splitter. An exception could be if the xDSL or POTS line card fails and a short is placed on the line. This risk, while rare, is possible. However in this instance, there is no third party harm. The customer would have the same problem, whether or not the service was provided by the same carrier or competing carriers. Existing test systems can determine such faults.

From the outset of this proceeding, the ILECs have generally rejected line sharing on technical grounds. For the reasons outlined above, Paradyne has not been persuaded by these arguments. Nevertheless, Paradyne notes that certain incumbent LECs have begun to acknowledge the technical feasibility and inevitability of line sharing, and are planning for such in earnest. SBC, for example, has accepted the idea of line sharing and even proposed a splitter topology similar to that proposed by Paradyne.[2]

II. The Commission Should Allow the Market to Determine POTS Splitter Designs

By allowing for a variety of technology-specific POTS splitters, the Commission would promote further innovation and competition. Rather than develop a single technology- or performance-based specification for a splitter, the Commission should instead encourage the adoption of technology-neutral network protection criteria, much as it has done with its own Part 68 program for the registration of customer premises equipment.

A. A Single Splitter Design Specification Would Stifle Innovation and Competition

Technology-specific POTS splitters are essential to innovation and competition, both among equipment manufacturers and service providers. The Commission should therefore refrain from adopting a single technology- or performance-based specification for a splitter. As tests by Paradyne and others have shown, POTS splitter performance varies widely among various DSL technologies. The ADSL standard, T1.413, POTS splitter design specification is entirely insufficient for some DSL technologies, including Paradyne's MVL technology. Technology-specific POTS splitters are therefore an integral part of DSL development and refinement.

Some of the first *standardized* DSLs—ADSL and G.lite—have only recently reached ITU approval stages. Current studies suggest that G.lite will not serve substantial portions of the

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[2] *See* SBC Communications *Ex Parte* Presentation, CC Docket No. 98-147 (filed Sept. 23, 1999) ("Proposed OSS Solution for SBC Line-Sharing Needs"); Paradyne Corp. *Ex Parte* Presentation, CC Docket No. 98-147 (filed Oct. 12, 1999).

market due to issues reach and performance, and that even full-rate ADSL is unable to reach the full potential of the non-loaded loop.[3] Paradyne has performed laboratory experiments that have demonstrated that the use of alternative POTS splitters, *i.e.*, designs that vary from the T1.413 specification, can markedly improve ADSL and G.lite performance. ADSL and G.lite address only one type of xDSL service: asymmetrical data applications over a restricted service area. Beyond ADSL and G.lite, a variety of other DSL technologies continue to develop. Many of these xDSL technologies are highly reliable for a wide range of applications and—in some cases—over the *entire* service area.[4] But importantly, some of those technologies depend critically on unique POTS splitters.

The DSL industry is in its infancy, and the Commission must ensure that its rules foster—rather than stifle—further DSL innovation and refinement, especially for DSL designed to operate concurrently with POTS. By endorsing a technology- or performance-specific specification or standard for DSL, the Commission would risk freezing DSL development at a very early, rudimentary stage.

B. The Commission Should Ask an Industry Standards Body to Develop Network Protection Criteria Similar to the Commission's Own Part 68 Program

To accommodate the need for technology-specific POTS splitters while protecting the network, the FCC should encourage the adoption of technology-neutral network protection criteria, much like it has done with its own Part 68 program for registering customer premises equipment. The FCC could rely on an industry standards body such as TIA Subcommittee TR41.9—an experienced and relatively unbiased body—to develop such criteria through liaisons with ANSI Committee T1A1, a network performance standard group, as well as ANSI Committee T1E1, a transmission design standards group.

Paradyne envisions minimum requirements necessary to protect both POTS and xDSL services. Paradyne favors private-sector development and verification of these requirements, in contrast to the current registration process administered by the FCC under Part 68 of its rules. While similar in approach to Part 68's "prevention of network harms" approach, an industry-led approach to network protection criteria would better keep pace with rapid technological change.

Consistent with such an approach, the FCC should not adopt, or delegate development to a standards body, a singular performance-oriented technical specification for a POTS splitter.

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[3] *See, e.g.,* Document WP 1/15/TEMP/NT-U18r2, "G.lite.bis Issues List" (submitted to the November 1999 meeting of ITU-T Study Group 15, noting open issues regarding, and limitations of, G.lite) Document WP 1/15/TEMP/012, "Communication on ADSL Performance Test loops with Bridged Tapes from ADSL Forum" (submitted to the June 1999 meeting of ITU-T Study Group 15, noting limitations of ADSL).

[4] Loaded loops are presently excluded.

Neither should it endorse existing technology-specific solutions such as the performance requirements developed by Committee T1E1 and specified in T1.413. As the experience with dial-up modems indicated, competition and consumer expectations will address, more effectively than any standards body, performance issues as the technologies evolve. The FCC's Part 68 program—and its "prevention of network harms" approach—opened the door to numerous telephony equipment innovations. As a prime example, dial modem innovations have boosted line speeds from the V.22 era of 1200 bps to V.90 speeds that now approach 56 kbps.

III. A Generic Mechanical Housing Could Accommodate a Variety of Technology-Specific POTS Splitters

The Commission should encourage the development of a mechanical housing to accommodate a variety of technology-specific POTS splitters on a line-by-line basis. By doing so, subscribers and service providers would be able to upgrade, improve, change, or abandon services as they saw fit.

Mechanical housings for unbundling multiple subscriber lines can be readily developed to permit simple per-line plug-in provisioning of current and future technology-specific POTS splitter types.[5] Different housings, tailored for different installation sites, could host these same POTS splitter plug-in modules or circuit cards. Furthermore, such housings may eventually permit *electronic* provisioning and de-provisioning of unbundled services. The relatively inexpensive housings can be pre-wired prior to POTS splitter plug-in if proper bypass connectors are used. While some might claim that this approach would require ILECs to maintain an unwieldy inventory of POTS splitter types, the number of POTS splitter types will be tempered by market conditions, which are likely to encourage convergence around a more limited number of POTS splitter types.

As a practical matter, the ILEC and the CLEC may agree that the ILEC should own the splitter housing, but the CLEC should have the option of owning the splitter card so long as it can meet the "prevention of network harms" criteria. For the central office environment, the splitter housing or rack should be mounted independent from the horizontal frame where the ILEC performs its wiring and also from the CLEC "cage." A neutral bay location that is near the horizontal frame would minimize central office wiring while permitting access by the CLEC.

Such spectral unbundling should be permitted not only at the serving wire center, but also at the Digital Loop Carrier Remote Terminal ("DLC-RT"). This approach is consistent with that

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[5] *See* Attachment to this Letter (illustrating a common POTS splitter mechanical housing design that would support current and future POTS splitter electrical designs). As the Attachment shows, the POTS splitters would plug into various cabinets intended to meet requirements of the unbundling equipment sites. Only POTS service would be provided, unless a POTS splitter were installed. A POTS filter would add the intended DSL service capability.

taken by the FCC in its recent action on unbundled network elements.[6] Given that the FCC's new UNE rules will require unbundling of subloops, any such spectral unbundling rules should also apply to sub-loops extended from the remote terminal. These mechanical housings could easily be adapted to operate in the remote terminal environment.

By encouraging a mechanical housing for plug-in modules or circuit cards, the Commission would foster a variety of equipment ownership and purchasing schemes. For example, an ILEC could install housings, and the CLEC could provide the type modules (splitter cards) required for the services to be offered and request timely installation by the ILEC. Alternatively, the mechanical housing could be located on a third party's premises, where licensed and bonded technicians could perform service changes. The splitter location has been dubbed, "the meet point" by Telecordia and in its view is assigned by the CLEC.[7]

IV. CLECs Must Have Access to the POTS Splitter, Particularly for Testing

While many arguments have been advanced in favor of, and opposition to, splitter control and ownership, most have overlooked the problem of test access. Test access facilitates a variety of critical tasks, including loop qualification, DSL provisioning, and DSL maintenance. While the ILEC always has test access through the switch, the CLEC only has access to the high-pass portion of the loop at the loop's DSL end. Loop test signals are confined to direct current and low frequencies, rendering useless the CLEC's current test access at the DSLAM. By mandating CLEC test access to the splitter, the Commission would not only ensure a CLEC's ability to provision and upgrade the splitter in a timely manner, it would also permit test access to the loop for maintenance.

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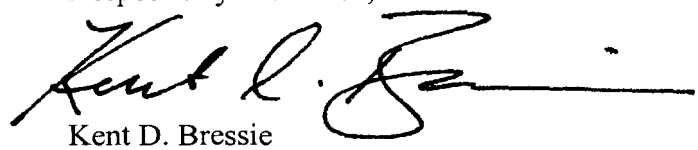
[6] *See* News Release: FCC Promotes Local Telecommunications Competition; Adopts Rules on Unbundling of Network Elements, Report No. CC 99-41 (rel. Sept. 15, 1999).

[7] *See* SBC Communications Written *Ex Parte* Presentation, CC Docket No. 98-147 (filed Sept. 23, 1999).

CONCLUSION

For the reasons stated above, Paradyne urges the Commission to adopt line sharing as a means of enhancing competition and innovation in the markets for local and advanced services.

Respectfully submitted,



Kent D. Bressie

Counsel for Paradyne Corporation

Gordon Bremer
Frank Wiener
Philip Kyees
Peter Walsh

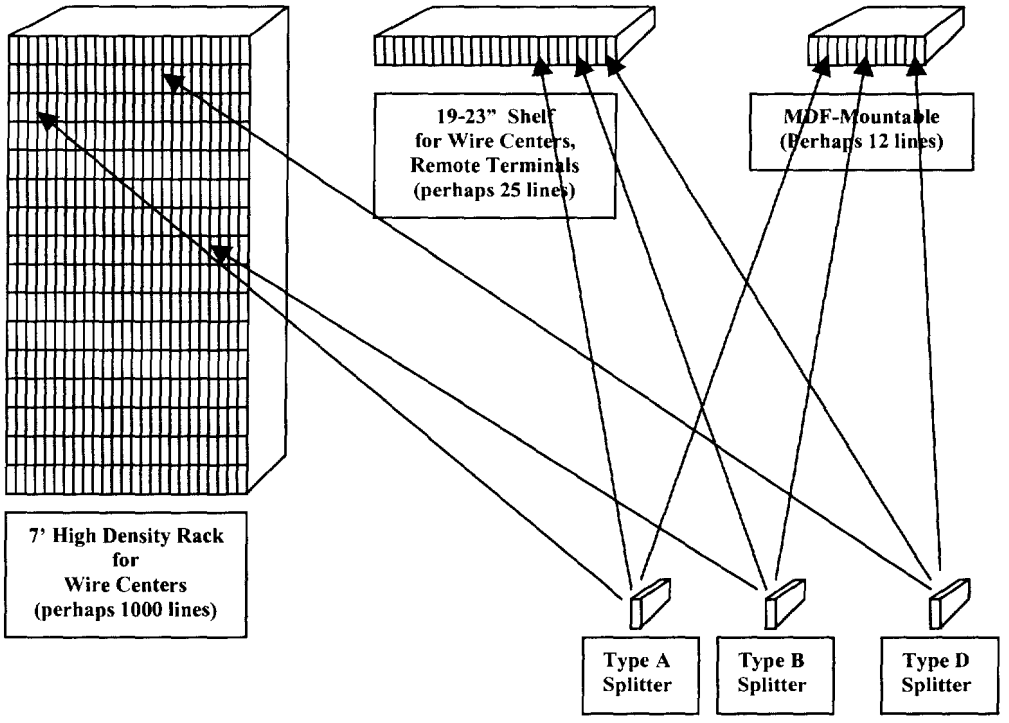
Paradyne Corporation

Attachment

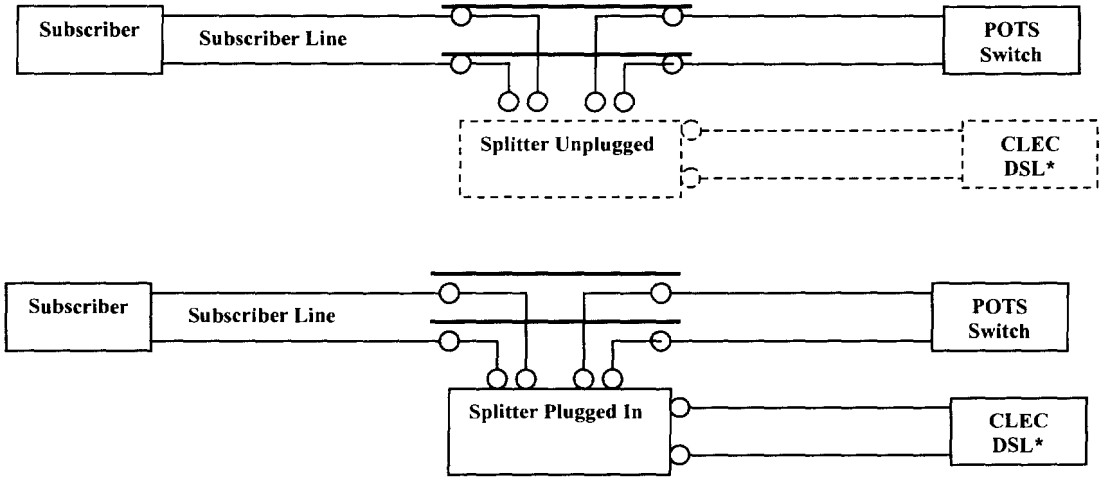
cc: Stagg Newman
Doug Sicker
Vincent Paladini
Staci Pies
Paul Marrangoni

An Unbundling Equipment Example

The pictorials below show a common POTS Splitter mechanical design that supports most, if not all, POTS Splitter electrical designs in the years to come. These POTS Splitters plug into various cabinets intended to meet requirements of the unbundling equipment sites. Only POTS service is provided if no POTS Splitter is installed. Installing a POTS filter adds the intended DSL service capability.



Mechanically Interchangeable POTS Splitters Fit any Enclosure



Only POTS Service When Splitter Not Plugged In
DSL Service Included Upon Splitter Insertion

** **NOTE**: CLEC-Splitter wiring may have more than one wire pair for purposes of mutliple services or control.*